rWeather Newsletter

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Conditions on the information superhighway: states offer varied versions of Web-based road/weather information

Many states are now collecting and providing road and weather information, and we wondered how many were disseminating this information on the Web and what it looked like. A Web search turned up many sites, particularly in the Midwest and West, that are providing a variety of data in numerous ways.

Some sites, such as British Columbia, Kansas, and Montana, provide basic road condition information (for example, normal, partly snow- or ice-covered, mostly covered, closed) but not weather. Most provide both road conditions and weather, and the information can be very detailed, including air temperature; dew point; relative humidity; average wind speed, gusts, and direction; precipitation; and pavement surface temperature at specific locations. The frequency with which the information is updated varies. While many sites include a clickable or scalable map, almost all report the information in either paragraph or table format. A few, such as Nebraska and Washington, provide a good deal of information graphically. Some sites, such as Idaho, North Dakota, and Utah, operate only in winter months, while others operate year-round.

Below is a table that summarizes our findings. It compares the sites' primary format (text, graphic, or both) and describes the kinds of road and weather information that each provides. The Comments column includes where the data come from and how often they are updated, if a site offers such explanation. Also compared are the kinds of additional links that each site includes.

This comparison is not meant to be comprehensive, nor can it be relied upon to be accurate for very long, given the ever-changing nature of the Web. If it proves to be helpful to many viewers, we may consider expanding it to include more sites and more information.

Road/Weather Web Sites

Format	Information Provided	Comments	Links Provided
British Columbia (Canada) Provincial Highways Road Reports www.th.gov.bc.ca/bchighways/roadreports/roadreports.htm			
Text	Selecting a region of the province and then clicking on a highway route map leads to paragraph descriptions of road conditions by road number and name.	Reports are updated as new information becomes available.	Load restrictions, highway cameras, major incidents and road closures, travel advisories
Colorado Traveler Information www.dot.state.co.us/Travelinfo/CurrentCond/			
Text	Selecting a region or highway route produces a list of conditions (dry, icy, wet, snow, etc.) for relevant highway routes and the current weather forecast.	New information is posted "as it becomes available." Won't print from the screen.	Travel alerts, traffic speeds (Denver), scheduled lane/road closures
Idaho Transportation Department— Idaho Road Report www2.state.id.us/itd/ida-road/index.asp			
Text	Clicking a region of the state map leads to a road report by highway number and point-to-point route. Text describes pavement surface (dry, wet, icy), weather (cloudy, fog, snowing), and construction.	Road conditions updated daily during winter. Construction updated weekly.	Additional road information, National Weather Service forecasts
Iowa WeatherView www.weatherview.dot.state.ia.us/			
Text and graphic	Clicking an RWIS icon on a scalable map leads to a text description of air temperature; dew point; relative humidity; average wind speed, gusts, and direction; precipitation; and pavement surface temperature at that specific location. Clicking on an AWOS icon produces visibility and ceiling in addition, but not pavement information.	Data are from RWIS and AWOS sites.	NWS forecasts, road condition report, Iowa Winter Road Conditions report
Iowa Winter Road Conditions www.earthsat.com/iowa.winter.html			
Text and graphic	Color coding on a state map indicates road surface conditions (normal, partly snow or ice covered, mostly covered, closed) for major highways. Text descriptions are also available for major highway corridors.	By Earth Satellite Corp. Uses data from Iowa State Patrol and NWS network. Presented Nov. 15 to April 15. Updated up to 7 times a day as conditions warrant.	

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Road/Weather Web Sites

Format	Information Provided	Comments	Links Provided
Kansas Road Condition Reporting System http://kdot1.ksdot.org/rcrspublic/imageMaps/im_main.asp			
Text and graphic	Selecting a regional map shows DOT-maintained routes, color-coded to indicate wet, flooding, slush, snowpack and ice, and drifting snow. A text description is also available.		None
Minnesota Scan Web SSI http://156.98.4.63/			
Text and graphic	Clicking on a region of the state map leads to a text description of RWIS data for airports and highways, including pavement status, surface and subsurface temperatures; air temperature; dew point; precipitation type, intensity, and rate; visibility; and wind speed and direction. More detailed data are available for each location. Another clickable map leads to 36-hour mesoscale weather forecasts of air temperature; dew point; visibility; wind speed and direction; and precipitation type, rate and probability for each location.	Data refresh every 6 minutes. History pages store 8 hours of previous data for a single location and display both textually and graphically.	NCAR real-time weather data, The Weather Channel radar
Montana Traveler Information www.mdt.state.mt.us/travinfo/winter_frame.html			
Text and graphic	Color-coded maps of state highway routes indicate road conditions (bare and dry, closed, icy, snowpack, slushy, wet, black ice, fog, high winds, fallen rock). Text reports describe major highway routes in paragraph form.	Updates are provided as major changes occur each day.	Winter storm warning/watch/ advisory, example images of road conditions

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Road/Weather Web Sites

Format	Information Provided	Comments	Links Provided
Nebraska Road Reports & Travel Info www.dor.state.ne.us/rca/#map%20conditions			
Graphic and text	Color coding of major highways on a scalable map indicates road conditions (clear, icy, percentage of snow coverage). Road Weather.com map uses color coding to indicate pavement temperature (above or below freezing), and clicking on an RWIS icon produces data about road and air temperature, dew point, precipitation, and wind speed and direction for that location.	Conditions for basic road map data reported by observers. Conditions for Road Weather.com map reported by SSI electronic transmitters	Numerous weather links, construction/ detour report, national traffic and road closure info, state and county maps, truck information guide, rest area list
North Dakota Road & Traveler Info www.state.nd.us/dot/road.html			
Text and graphic	Color coding of the state map indicates road conditions (closed or blocked, snow covered, icy, wet, frost, slush, good). Text version reports precipitation, visibility, and traffic speeds by highway route. A SCAN Web (SSI) map allows clicking on an RWIS icon to view a text description of air, wind, visibility, precipitation, and pavement data for a specific location.	Winter road reports updated 5 times daily, or more if conditions warrant	Road construction, load restrictions, maintenance forecasts, road closures, rest areas
Ohio Road and Weather Information System www.odotonline.org/otis/rwis/default.asp			
Text and graphic	Clicking an icon on a scalable map leads to a text description of air temperature; relative humidity; dew point; wind speed and direction; precipitation type, intensity, and accumulation; and road surface and subsurface temperatures for a specific location.		Construction, road closures, weather links

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Road/Weather Web Sites

Format	Information Provided	Comments	Links Provided
Oregon Department of Transportation "Trip Check" www.tripcheck.com/RoadCond/roadcondindex.htm			
Text	Clicking a region of the state map leads to a road report by highway number. Text description of weather condition, road surface, closure information, current air temperature, new snow, roadside snow, and date and time of update.		Incident maps and roadwork information, NOAA regional weather reports, winter travel information, roadway cameras
Prince Edward Island (Canada) Road Conditions www.gov.pe.ca/roadconditions/index.php3			
Text and graphic	Provides a text description of road conditions (e.g., icy) and visibility by route/road name. A scalable map shows color-coded conditions (clear, slippery, partly covered, snow covered, closed).	To see the interactive map, users must download MapGuide Viewer from the site, currently available only for PC.	
South Dakota Maintenance/Winter Road Condition Report www.state.sd.us/dot/Operations/Road_Condition_Report/index.htm			
Text	Clicking a region of the state map leads to a paragraph description of regional visibility, precipitation, and road condition.	Data are updated three times daily from early November through late March. Data come from observations by maintenance personnel.	Road conditions on I-90 and I-29, statewide summary report.
Utah Traveler Information www.dot.state.ut.us/public/traveler_info.htm			
Text	Clicking the name of a region leads to weather and road condition information in paragraph format.	Provided October through April. Info updated as conditions change, but not on weekends. (Last updated 12/27/00)	Construction report, scenic byways

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Road/Weather Web Sites

Format	Information Provided	Comments	Links Provided
Washington Real Time Road and Weather Traveler Information www.wsdot.wa.gov/rWeather/			
Graphic and text	A state map overviews weather graphically (fog, sun, snow). Scalable views offer icons for weather, road condition reports, camera views, and HAR messages. Clicking on a weather data icon produces a text description of temperature, dew point, humidity, wind, precipitation, pressure, and NWS forecast for specific location. Clicking on a pass report icon produces paragraph descriptions of mountain pass conditions. Roads are color-coded for temperature (above 38˚, 33˚ to 38˚, and 32˚ and below). For I-90, I-5, and US 2, a cut-away map shows current and forecast road temperature and weather data for the length of the roadway.	Real-time data from ~350 weather stations and other sources, traffic cameras, pass reports, and HAR broadcasts. Plans to include real-time reports on incidents and construction. Radar and Nexrad imagery available from Intellicast.	Area traffic cameras, WSDOT Vessel Watch (ferries), mountain pass road conditions, bridge traffic conditions, posted warnings, NWS reports, radar imagery, TV station weather reports, other DOTs, alternative transportation modes.
Wyoming Highway Conditions wydotweb.state.wy.us/Docs/Roads/Roads.html			
Text	Clicking a region of the state map leads to a text description of road conditions (wet, dry, slick, etc.) by highway routes		Restrictions, determination of mileage between cities, Web camera views

Today's Forecast: Mostly Sunny—Weather and Transportation Agencies Find Ways to Work Together

Although any driver can readily explain how weather affects his commute, and highway maintenance supervisors are thoroughly aware of how weather affects their work, surprisingly, agencies at the state and federal levels have taken a long time to recognize the importance of providing weather information to surface transportation systems. The good news is that federal and state agencies are now making greater effort to apply new technology and coordinate weather information for the benefit of surface transportation.

Weather Information for Surface Transportation (WIST)

On December 4 through 6, 2000, the Office of the Federal Coordinator for Meteorology (OFCM) and the Federal Highway Administration (FHWA) sponsored the second annual Weather Information for Surface Transportation (WIST) symposium.

The first symposium, held November 30 through December 2, 1999, allowed members of the transportation and meteorological communities to listen to each other, learn each others' language, and learn about each others' issues.

Extensive surveying for 2000 symposium

After the first symposium, OFCM staff queried over 750 federal, state, and local agencies, as well as other professional surface transportation organizations, to identify user needs and requirements for weather information. The surveys and questionnaires focused on four transportation modes: roadways, railways, waterways, and pipelines. This information was compiled into a database to enable queries and analysis. The second symposium was intended to allow participants to discuss and validate these user needs and requirements. Different groups had the opportunity to explain how they use weather information.

The 2000 symposium was also intended to provide updates on weather support capabilities, services, and initiatives. Discussed were decision support systems, specifically the Maintenance Decision Support System (MDSS) project sponsored by the FHWA.

Guidance for road maintenance managers

This project is seeking to produce a prototype tool that will give road maintenance managers guidance in making winter maintenance decisions. This tool will be based on leading research of systems for diagnosing and predicting weather and road behavior. It will evaluate raw weather and other data and then suggest actions to be taken on the basis of those data.

The work is being carried out by six national labs: Cold Regions Research and Engineering Laboratory (an Army facility), National Center for Atmospheric Research (a National Science Foundation facility), Massachusetts Institute of Technology—Lincoln Laboratory (Air Force facility), National Severe Storms Laboratory (a National Oceanic and Atmospheric Administration facility), Environmental Technology Laboratory (NOAA), and Forecast Systems Laboratory (NOAA).

Although private vendors are also interested in supplying decision support systems to public agencies, the FHWA intends to make its system non-proprietary and available for both federal and private applications.

Positive state perspective

Bill W. Brown, Transportation Engineer with the Washington State Department of Transportation's Advanced Technology Branch and manager of WSDOT's rWeather program, attended the December 2000 symposium. Brown reported that from a state perspective, the meeting was helpful in uncovering additional questions to be answered, but a direction and agenda have yet to be decided.

Brown believes that WIST will "definitely be very beneficial." The FHWA is fully committed to WIST, and the OFCM, which currently has subgroups on aviation and space, is seeking to add a subgroup on surface transportation. "It's kind of exciting," Brown said. "It will be interesting to see what form it will take."

To view meeting proceedings aim your browser at: <http://www.ofcm.gov/Wist%20Proceedings/Proceedings.htm>.

Northwest Regional Modeling Consortium

Washington is one of the few states—perhaps the only one—where weather, transportation, research, and other agencies have formally joined forces to share information. The Northwest Regional Modeling Consortium, a group of local, state, and federal agencies, formed over ten years ago in response to air quality issues but eventually expanded to include the development and sharing of weather information.

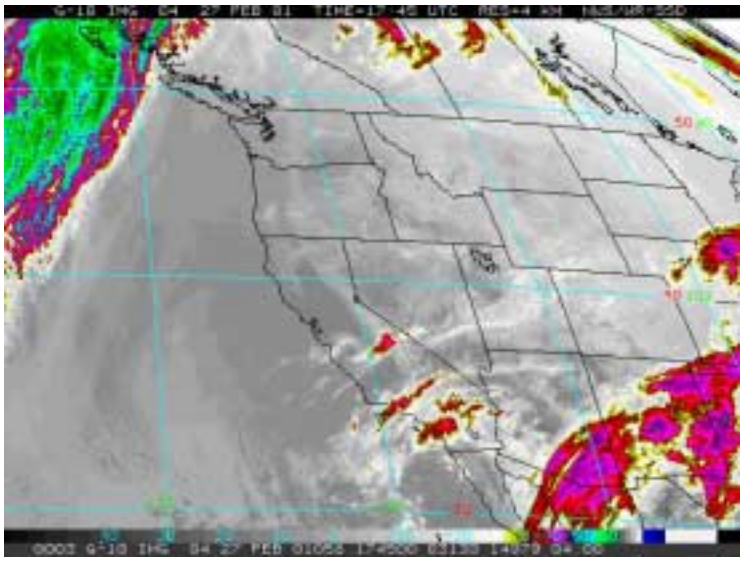
According to the consortium's Web site, "Each agency recognized its need for detailed weather information and that by combining resources and talent we could accomplish what was impossible to do alone."

Extensive data collection for detailed weather modeling

The consortium has established meteorological observing networks that collect data in real time. Sources across the state include agricultural monitoring networks, air pollution sensing stations, and even television station weather networks, as well as the resources of the National Weather Service (NWS) Advanced Surface Observation Sites and Federal Aviation Administration. WSDOT joined this consortium, adding data from its own road/weather information stations so that all members now have access to data from nearly 400 remote weather sites

Over the past five years, the Northwest Regional Modeling Consortium has supported the University of Washington's efforts to develop high-resolution, numerical weather prediction over the Pacific Northwest. By combining resources, the consortium purchased a powerful 14-processor computer and adapted the state-of-the-art Pennsylvania State/NCAR forecast model (the MM5) to run twice daily, producing 48-hour forecasts for the Pacific Northwest. With the addition of a second 14-processor computer from the Environmental Protection Agency, the consortium is also modeling statewide Oregon weather, which helps in better predicting southern Washington conditions.

WSDOT's rWeather program upgraded the weather forecasting computer so that 4-km forecasts, previously available only for western Washington, are available for the entire state—the highest resolution numerical weather prediction in the U.S.



Successful collaboration

Clifford F. Mass, professor of Atmospheric Sciences at the University of Washington, is working to improve weather prediction systems and represents the UW in the consortium. He has said, "The Northwest Regional Modeling Consortium has worked together to create the infrastructure of very powerful computers, and we have access to many of the data that are being collected around the state in real time. The support we're getting for this project is enabling us to push the technology of local weather prediction much faster than we'd be able to do otherwise and farther than it's been pushed anywhere."

WSDOT's membership in the consortium has benefited both the consortium and WSDOT. Bill Brown explained that from WSDOT, the consortium has received more funding and more data. In return, the resulting improved data and higher resolution modeling have contributed to WSDOT's rWeather Web site, as well as enabled NWS forecasts for Washington to be more detailed and accurate. WSDOT uses these forecasts directly from the NWS, as well as through other weather service providers who rely on NWS forecasts.

Consortium members

Current members of the consortium include the National Weather Service, U.S. Department of Agriculture Forest Service, U.S. Navy, U.S. Environmental Protection Agency, the Washington State departments of ecology, transportation, and natural resources, Port of Seattle, Seattle City Light, Puget Sound Clean Air Agency, and University of Washington. Corporate affiliates Sun Micro Systems and Kuck & Associates have also made substantial contributions.

To discuss any of the information in this newsletter contact Bill Brown by email: <wwbrown@u.washington.edu> or by phone: (206)616-9183.

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